Day 1

# **Types of Computers & Computer Hardware**

## **Basic Terminology**

## **Computer**

## **Hardware**

## **Software**

## **Network**

## **Peripheral devices**

## **Input**

## **Data**

## **Information**

## **Output**

## **Processing**

## **Memory**

## **Storage**

**Types of Computers**

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## A personal computer; designed to meet the computer needs of an individual.

## Provides access to a wide variety of computing applications, such as word processing, photo editing, e-mail, and internet.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## A microcomputer that fits on a desk and runs on power from an electrical wall outlet.

## The CPU can be housed in either a vertical or a horizontal case.

## Has separate components (keyboard, mouse, etc.) that are each plugged into the computer.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## A portable, compact computer that can run on an electrical wall outlet or a battery unit.

## All components (keyboard, mouse, etc.) are in one compact unit.

## Usually more expensive than a comparable desktop.

## Sometimes called a Notebook.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Powerful desktop computer designed for specialized tasks.

## Can tackle tasks that require a lot of processing speed.

## Can also be an ordinary personal computer attached to a LAN (local area network).

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## A computer that was the fastest in the world at the time it was constructed.

## Can tackle tasks that would not be practical for other computers.

### Typical uses

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Large expensive computer capable of simultaneously processing data for hundreds or thousands of users.

## Used to store, manage, and process large amounts of data that need to be reliable, secure, and centralized.

## Usually housed in a closet sized cabinet.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Purpose is to “serve.”

## A computer that has the purpose of supplying its users with data; usually through the use of a LAN (local area network).

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Also called a PDA (Personal Digital Assistant).

## A computer that fits into a pocket, runs on batteries, and is used while holding the unit in your hand.

## Typically used as an appointment book, address book, calculator, and notepad.

## Can be synchronized with a personal microcomputer as a backup.

# **Computer Hardware**

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Case that holds the power supply, storage devices, and the circuit boards (including the motherboard).

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Where the processing in a computer takes place, often called the brain of the computer.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Units that gather information and transform that information it into a series of electronic signals for the computer.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## An arrangement of letters, numbers, and special function keys that act as the primary input device to the computer.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## An input device that allows the user to manipulate objects on the screen by moving the mouse along the surface of a desk.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## A circuit board that gives the computer the ability to accept audio input, play sound files, and produce audio output through speakers or headphones.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## A device that sends and receives data to and from computers over telephone lines.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Devices that display, print, or transmit the results of processing from the computer’s memory.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Display device that forms an image by converting electrical signals from the computer into points of colored light on the screen.

#### The density of the grid used to display or print text and graphics; the greater the horizontal and vertical density, the higher the resolution.

#### The smallest unit in a graphic image; computer display devices use a matrix of pixels to display text and graphics.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Used to keep data when the power to the computer is turned off.

## Different forms

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Output device that produces text or graphical images on paper.

# **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Output devices that receive signals from the computer’s sound card to play music, narration, or sound effects.

# Day 2

# **Computer Performance**

## **Boot Process**

### Purposes

## **6 events of the Boot Process**

## **Circuits**

## Circuits run between

## **Silicon Chip**

## **Megahertz (mHz)**

## 1.3 GHz means that the microprocessor’s clock operates at a speed of 1.3 million cycles per second.

## **Pentium**

### Other generations were called

#### 80-88 / 286/ 386 / 486

## **RAM vs. ROM**

## RAM

### Very volatile

## ROM

## **Binary Number System**

### Bit

### Byte

## Also referred to as Base 2 Binary Code.

## **Memory Measurements**

## Bit

## Byte

## Kilobyte

### Exactly 1,024 bytes

## Megabyte

### Exactly 1,048,576 bytes

## Gigabyte

## Terabyte

# **Storage Devices**

## **Storage Devices**

## Medium/media

## **Hard Disk**

## Can store billions of characters of data.

### Stated in forms of bytes:

## **Magnetic Storage**

## A fairly permanent type of storage that can be modified.

## **Floppy Disk**

## May be referred to as a “floppy”

## 3½ disk capacity is 1.44 MB or 1,440,000 bytes

## **Floppy Disk Options**

## Formatted

## Write-protected

**Zip Disk**

### Available in 100 MB and 250 MB versions

## **Digital Audio Tape**

## **Optical Storage**

## Reading is done through a low-power laser light.

#### Dark spots

#### Lighter, non-spotted surface areas

## **CD-ROM**

## Also called CD-R

### CD-Read

## **CD-RW**

## **DVD-ROM**

# Day 3

# **Operating Systems**

# **Development of computers**

# **1st Generation computers**

#### Vacuum tubes are electronic devices that control the flow of electrons.

#### Used custom application programs, which were made for the specific task that the computer was to perform.

# **2nd Generation computers**

### Transistors performed functions similar to vacuum tubes, but they were smaller, cheaper, less power-hungry, and more reliable.

### Used English like commands rather than binary numbers.

### Made it possible to develop software.

# **3rd Generation computers**

### Smaller and less powerful than 1st and 2nd generation computers, but had the ability to run multiple programs for multiple users simultaneously.

# **4th Generation computers**

### Computer systems were smaller, faster, and less expensive than 3rd generation computers.

### Operating System Software

# **Platform**

* Two popular platforms

# **Multitasking**

# **GUI (Graphical User Interface)**

# **Definitions**

* Program
* Application Software

## Drive

### 

## Folder

## File

# Day 4

# **Networks**

# **Network**

# **Network Terms**

## File Server

## Host Computer

## Workstation

#### Example -

## Client

#### Example -

# **Network Interface Card (NIC)**

#### Example -

#### Example -

# **Network Connections Devices**

## Modem

## Hubs

## Routers

## Gateway

# **Local Area Network (LAN)**

### Example -

# **Wide Area Network (WAN)**

### Examples

# **IP Addresses**

### Example –

# Day 5

# **Ethics & E-Mail**

# **Ethics**

# **Situation 1**

## You are hired to manage the network at a local business. On your first day of work, your boss hands you the latest upgrade for Microsoft Office and asks you to install it on all the computers in the business. When you ask if the business has a site license, your boss says “No, do you have a problem with that?”

## What should you do?

# **Situation 2**

## You are hired as programmer for a local school district. The Superintendent asks you to write software that will monitor online access and report online activities to the Superintendent. No permission has been given for this access to be monitored and the Superintendent feels that if people don’t know they are being monitored it won’t hurt them.

## Should you write the program?

# **Issues dealing with Ethics**

# **Software Licenses**

# **Copyrights**

## Provide severe restrictions on

# **Citing Internet Information**

### Author’s last name

### Author’s first name

### Title of the complete work

### Version of file number if available

### Date the document was created

### Internet address

### Date you accessed the information

### (If any information is missing, skip to the next item)

# **Acceptable Use Policies**

# **Rights of Privacy, Accuracy, Property, and Accessibility**

### Banks

### School Records

### Medical Records

### Credit Card Companies

### Phone Companies

### Driver’s License Bureau

# **Privacy Issues**

## Do you think that data about you should be distributed without your permission?

### Why or why not?

## What are some situations that you know of where your personal information was shared?

# **E-Mail**

## Important E-Mail terms

### Account –

### Address –

### Attachment –

### Netiquette –

# **Guidelines for Good E-mail**

Day 6

## **VIRUSES**

# **Computer Virus**

## It can

# **Spreading Viruses**

# **Trigger Events**

## Time Bomb

#### Example

###### Damages files on March 6 the artist’s birthday

## Logic Bomb

**Classification of Viruses**

# **File Virus**

### Example

##### Notorious for overwriting a section of the hard disk, making it impossible to access data

# **Boot Sector Virus**

### Example

##### Every time you turn on your computer the virus is activated and infects any non-write-protected files including your hard disk

# **Macro Virus**

## Macro

### Example

##### Attaches itself to Microsoft Word documents

##### Attaches itself to Microsoft Excel spreadsheets

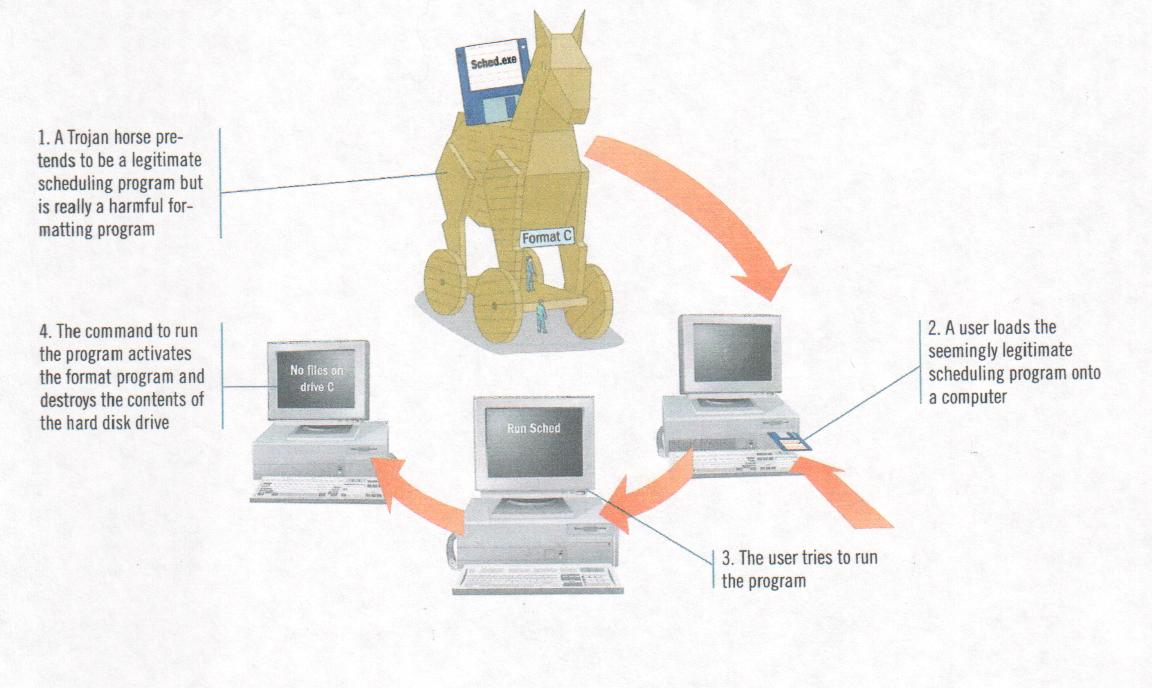
# **Other Viruses**

# **Trojan Horse**

### 

## Different tasks that can be affected

# **Trojan Horse Example**



# Worm

# **Worm Example**

# Worm

# **Protecting yourself from viruses**

## Antivirus software

### Example

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